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ABSTRACT

This study was designed to investigate further the validity of using a space test (marking word boundaries, a task involving setting aside words from the context of a sentence) as a measure of reading comprehension. Specifically, the purposes of this investigation were to compare student performance on a space test to their performance on a cloze procedure, and to suggest acceptable scores for the space test as a placement test. A total of 716 third, fourth, fifth, and sixth grade students completed space tests and cloze procedures constructed from the basal reading materials used at their school. Significant correlations were found between the raw scores on the space test and the cloze procedure, indicating that the two measures assessed similar traits. The data further suggested that a student was probably reading below grade placement level when scoring below 40% on a space test of a passage written at grade level. Much as in a similar study, students seemed to enjoy completing the space test, while many of them seemed frustrated by the cloze procedure. (RL)

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The Space Test as a Possible New Informal Reading Placement Test

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The Space Test as a Possible New Informal Reading Placement Test

Competent readers attempting to gain information from the printed page engage in a "guessing game" in which the material that they have already read and the material that they expect to read facilitates the identification of upcoming words (Goodman, 1976). This contextual characteristic is also an important component of Smith's (1978) information processing model. According to this model, word identification is possible when the use of context by a reader reduces the number of possibilities for what that word might be.

Klein and Klein (1972) in trying to determine the effect of context utilization on word identification decisions made by readers of different ages, developed a technique which asks students to mark slashes between the words in the context of a passage. Some of the early research in the area of word boundaries provided some evidence of a possible relationship between ability to mark word boundaries and reading performance among very young readers (Mickish, 1974; McNinch, 1974). Other studies (Klein and Klein, 1972; Klein and Klein, 1973; Klein, Klein, and Doris, 1973; Klein, Klein, and Bertino, 1974) indicated that readers of different ages responded differentially to the word boundary-type tasks at the various grade levels and that the ability to use contextual information might be developmental in nature.

Two more recent studies supported earlier findings and offered interesting avenues for further research. Hecker (1978) found evidence that (1) performance on a word boundary task was associated with grade placement level and level of

reading acquisition of students, and that (2) word boundary-type tasks correlated highly with cloze procedure tests, suggesting that they might measure similar traits. Hecker and Jerrolds (1979) found support for the hypothesis that a space test, a special format for a written passage based on word boundaries research (see Figure 1), could serve as an informal measure of reading in much the same way as the cloze procedure functions. Since the space test can be completed within a few minutes, it would offer an alternative to teachers who are usually concerned about the time taken by the various classroom tests. Further, it should be noted that the present researchers and other teachers have noted that some children are resistant to, and others frustrated, by the cloze technique. Apparently these problems arise because the format for the cloze technique is such that those taking the test realize that for many cases there is no possibility beyond the wildest chance that they can get the right word. With the space test there are sufficient data to make it possible to get any or all words right. On the cloze test children are sometimes upset because they cannot tell how well they are doing. The space test provides better opportunities for self-monitoring as the students proceed with the test. Thus, the possibility of using a space test as a measure of reading performance in addition to, or instead of, the cloze test was further explored in the present study.

Insert Figure 1 about here

This study was designed to investigate further the validity of using a space test as a measure of reading comprehension. Specifically, the purposes of this investigation were (1) to compare performance of students (at

w h i l e s h e t r i e s n o t t o p l

a y f a v o r i t e s t h e n u r s e s

c l a i m t h e d o g i n s t i n c t i

v e l y k n o w s w h e n o n e c h i l

d i s e x t r e m e l y d e p r e s s e

d o r s i c k w h e n t h i s o c c u r

s s h e w i l l s p e n d t h e n i g h

t a t t h e y o u n g s t e r s b e d s

Figure 1. Example of space test format used in this study.

different grade placement levels) on a space test to their performance on a cloze procedure measure; and (2) to suggest acceptable scores for the space test as a placement test.

Method

Seven hundred sixteen third, fourth, fifth, and sixth grade students from a South Carolina rural school were initially involved in this study. The students at each grade level were asked to complete space tests (see Figure 1) written at their grade placement reading levels and to complete cloze procedures which were made from the same passages.

During an inservice training session held by the researchers, the subjects' teachers were informed of the purposes for the study and trained in the administration of the tests. Written directions were left with the teachers who then administered the tests. Scoring was done by the researchers.

In order to minimize the possibility of ordering effects, the teachers at each grade level were randomly assigned to a "space first" or "cloze first" testing session. The second testing session took place one week after the first one.

The space tests and cloze procedures were constructed from four stories appearing in the basal reader materials used for instruction in the school where data were collected. Two readability formulas had to place the passages at the designated levels. Fry's (1968) readability graph was used for all four passages. In addition, the Spache readability formula (1958) was also used for the third level passage and the Dale-Chall formula for predicting readability (1948) was used for passages written at the fourth, fifth, and sixth grade levels. The passages from which the tests were made contained approximately 250 words each. The scoring procedure for the space test was the number of words

that were set aside by slashes (see Figure 2) out of the total number of words in the passage. The students were allowed two minutes to complete each level of the space test.

Insert Figure 2 about here

An every fifth word deletion pattern was used on each cloze procedure passage as recommended by Bormuth (1968). This resulted in 47, 45, 46, and 46 deletions for the passages written at the third, fourth, fifth, and sixth grade levels respectively. The total cloze score per passage was the number of exact words from the original text that were replaced by the student as recommended by Taylor (1953). The cloze procedures were administered under untimed conditions.

At each grade level, the raw cloze procedure scores were correlated with the raw space scores at the same grade level. Regression equations were then used for each grade level to predict a student's raw space score given a raw score on the cloze test that was equal to 38%. This was based on Bormuth's (1967) finding that a student could be instructed in materials in which he received a cloze score of 38%.

Correct raw space and cloze procedure scores were converted to percentages, and means of percent correct scores were calculated for each grade level. Data representing one classroom in grade four and one classroom in grade five were eliminated from the analyses of grades four and five respectively due to the large number of students who obtained scores equal to zero on those passages. It was reasoned that the teachers of these students did not sufficiently explain the task that the students were to perform. The total number of students included in these analyses was 666.

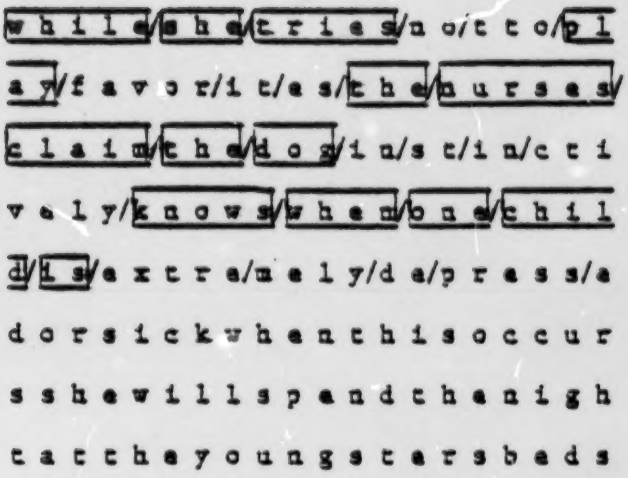
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Figure 2. An example of a correct word scoring for a space passage (score = 14).

Results

The results of the regression analyses are presented in Table 1. The correlations between the raw scores on the space and the cloze procedure tests were .63, .73, .63, and .52 for grades three, four, five, and six respectively. These correlations were all significant at the .01 level.

Insert Table 1 about here

The regression equations used to predict the space percent correct score equal to 38% correct in the cloze test yielded scores of 41%, 38%, 43%, and 40% for grades three, four, five, and six, respectively. As expected by the researchers, the means of percent correct scores on the cloze procedures calculated at each grade level were less than the 38% recommended by Bormuth (1967), indicating that the students in the sample were reading below grade level.

Discussion

The results of this study support the hypothesis that a space test could, with further validity and reliability research, serve as a measure of reading performance in addition to, or instead of, the cloze test. The correlation values are indicative that the two measures assess similar traits.

From the data presented in this study the authors are currently recommending that a space test score of 40% correct is approximately the same as a score of 38% on the cloze test. The data further suggest that a student is probably reading below his grade placement level if his space test score on a passage written at that grade reading level is below 40%.

Table 1

Correlations between Raw Scores on the Cloze and Space Tests, Mean Percents Correct, and Predicted Space Percent Equivalent to 38% on Cloze for Grades 3 through 6

Grade	Number of Students	Correlation Raw Scores on Cloze & Space	Mean Percent Cloze	Mean Percent Space	Space Percent Correct that Equals 38% of Cloze
3	101	.63*	16.09	29.24	40.55
4	219	.73*	26.56	31.95	38.22
5	144	.63*	28.52	37.64	42.51
6	202	.52*	23.47	33.98	40.48
Total	666				

*Significant at .01 level

It should also be noted that some students in the sample could not complete the cloze passages written at their grade placement levels. However, these same students managed to partially complete the space test even though the corresponding scores were generally low. This conclusion supports observations reported in an earlier study. Hecker and Jerrolds (1979) found that while students seemed to enjoy completing the space test, the completion of the cloze procedure was a frustrating experience for many of them.

While this study adds more insight into the possibility of using a space test as a measure of reading performance, some questions require further investigation. The authors are presently in the process of analyzing the data for order effects, possible interactions, and correlations with other measures of reading achievement. Additional research, however, needs to be done concerning the reliability and validity of the space test with the performance of children from other school settings.

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